

**INDIAN INSTITUTE OF TROPICAL METEOROLOGY  
PASHAN, PUNE-411 008**

**Tender No. CE/Landscape/CCCR/Housing/2011**

**TENDER NOTICE**

Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune-411 008 (India) invites sealed tenders (Part-I – Technical Bid, Part-II – Commercial Bid) in separate sealed covers from Contractors registered in the approved list of contractors of PWD, MES, CPWD, Railways and P&T and any other government departments in appropriate class for following work.

**Name of work – Landscape works surrounding Shishir Housing Complex at IITM**

Tender documents with BOQ can be obtained from Office of Civil Wing, of this Institute.

Date of issue of tender documents	<b>26.9.2011</b>
Pre bid meeting date & time	<b>4.10.2011 at 1130 hrs</b>
Last date of receipt of Tender at IITM, Pune:	<b>17.10.2011 at 1215 hrs</b>
Opening of Tenders (Technical Bids only) :	<b>17.10.2011 at 1500 hrs</b>

The Institute reserves the right to reject any or all tenders without assigning any reason thereof. For further details please visit our Website: [www.tropmet.res.in](http://www.tropmet.res.in)

Civil Engineer  
For Director  
Email : [anupam@tropmet.res.in](mailto:anupam@tropmet.res.in)

# **TENDER DOCUMENTS – PART-1**

**(TECHNICAL BID)**

**FOR PROPOSED**

Landscape works surrounding CCCR Housing- phase-1, at Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune, 411008, Maharashtra State

CLIENT:

**INDIAN INSTITUTE OF TROPICAL METEOROLOGY.**

DR. HOMI BHABA ROAD, PASHAN, PUNE 411008  
MAHARASHTRA

LANDSCAPE CONSULTANT  
**Swati Sahasrabudhe,**  
**Landscape Architect, Pune.**

## **CONTENTS**

**SECTION I - INVITATION FOR BIDS.**

**SECTION II - NOTICE TO TENDERERS AND GENERAL INSTRUCTIONS.**

**SECTION III - LETTER OF OFFER.**

**SECTION IV - SPECIAL CONDITIONS OF CONTRACT.**

**SECTION V - SPECIFICATIONS OF WORKS**

**SECTION VI - BILL OF QUANTITIES**

**SECTION VII - DRAWINGS**

SECTION - I

**INVITATION FOR BIDS (IFB)**

# Indian Institute of Tropical Meteorology

Dr. Homi Bhaha Road, Pashan, Pune 411008.

## SECTION I - INVITATIONS FOR BIDS (IFB)

The Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhaha Road, Pashan, Pune, 411008 has proposed to carry out Landscape works surrounding **Shishir Housing Complex**, at their existing campus at Dr. Homi Bhaha Road, Pashan, Pune, 411008 invite sealed tender in two bids (Technical – Part I and Commercial – Part II) for the Construction of work as detailed below.

The tender documents may be purchased from Director Indian Institute of Tropical Meteorology, Dr. Homi Bhaha Road, Pashan, Pune, 411008, from 26/09/2011 to 17/10/2011 for a non-refundable fee as indicated, in the form of cash or Demand Draft on any scheduled Bank payable at Pune in favour of The Director, Indian Institute of Tropical Meteorology, Pune.

The tender documents must be accomplished by Earnest Money of the amount specified for the work in the table below, payable at Pune and drawn in favor of Indian Institute of Tropical Meteorology. The tender security will have to be in any one of the forms as specified in the Bidding document and shall have to be valid for 90 (Ninety) days beyond the validity of the bid.

The tenders must be delivered to the Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhaha Road, Pashan, Pune 411008, on or before 12.15 Hrs on 17/10/2011. The Technical bids will be opened at 1500 hrs on 17/10/2011. The technical bids will be opened on the specified due date in the presence of tenderers who wish to be present and the financial bids of only those bidders will be opened whose technical bids is found suitable by the Institute.

The date and timing of opening Part II commercial bid will be intimated only to prequalified and technically acceptable tenders.

A pre-bid meeting will be held on 4/10/2011 at 11.30 Hrs. at the office of Indian Institute of Tropical Meteorology, Dr. Homi Bhaha Road, Pashan, Pune, 411008, to clarify the Technical issues and to answer questions on any matter that may be raised at that stage.

Also the IITM, Pune reserves the absolute right to reject any or all the bids/ tenders solely based upon the past unsatisfactory performance by the bidder/bidders, the opinion/ decision of the IITM, Pune regarding the same being final and conclusive.

Name of Work	E M D (Rs)	Cost Of Document (Rs)	Period of Completion
Landscape works surrounding <b>Shishir Housing Complex</b> at Indian Institute of tropical Meteorology, Pune.	35,000/- (Rupees Thirty Five Thousand only)	500/- (Rupees Five Hundred only)	02. (Two) Months

**SECTION - II**

**NOTICE TO THE TENDERERS AND GENERAL  
INSTRUCTIONS**

## SECTION II - NOTICE TO THE TENDERERS AND GENERAL INSTRUCTIONS

1. Sealed item rate tenders are invited from the Short listed Pre qualified Contractors for the Landscape works surrounding **Shishir Housing Complex**, at Indian Institute of tropical Meteorology, Pune.
2. Tender documents can be obtained from the Office of the Civil Engineer, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune, 411008, on Submission of DD/ Cash of Rupees Five Hundred only each (RS. 500.00) [non-refundable] on any working day between 26/9/2011 to 17/10/2011.

Tenders should be submitted in two (2) parts, in separate sealed envelopes superscribed with name of work, due date, item and nature of bid (prices or unpriced).

### PART I: Technical Bid

- [a] Complete with all tender documents, except schedule of rates, duly signed and stamped on all pages with Earnest Money Deposit.
- [b] Covering letter and all other enclosures to tenders shall be submitted.

### PART II: Commercial Bid:

- [a] Schedule of rates duly signed and stamped on all pages.

3. Tenderers should quote their rates both in figures and in words. In case of difference between figures & words, quote in words shall be considered. The bill of quantities must be fully priced and the total of each sub-head shall be carried over to the abstract page. In case of Arithmetical calculations, Outer vertical column amount shall be considered.
4. Each tenderer shall furnish Earnest Money Deposit of Rupees 35,000.00 (Rs. Thirty Five Thousand Only) by a Demand Draft Drawn in favor of 'The Director, Indian Institute of Tropical Meteorology, Pune.' with the tender. The drafts will be sent back to the unsuccessful tenderers after award of the work and without any interest. Tenders without earnest money shall be rejected. The earnest money shall be retained in the case of the successful tenderer and shall not carry any interest.
5. In the case of the successful tenderer, the Earnest Money will be either adjusted against Security deposit to be deposited at the time of agreement or shall be refunded on completion of agreement and deposition of security deposit by the successful tenderer.

6. A schedule of approximate quantities for various items accompanies this tender. It shall be definitely understood that the IITM do not accept any responsibility for the correctness or completeness of this schedule in respect of items and quantities and this schedule is liable to alteration by omission, deductions or additions at the discretion of the IITM without affecting the term of the contract.
7. Timely completion of the works is the essence of this contract and the time of completion must be strictly adhered to as specified failing which penalty clause will be made applicable.
8. The tenderer shall fill in the rates and amounts in the "Schedule of Quantities." He shall sign and date the tender documents in the spaces provided for the purpose. All pages of the document shall be signed and stamped. The tenderer shall initial each page of the Schedule of Quantities.
9. The tender shall be signed by a person or persons so authorized by the tenderer.
10. The tender form must be filled in English and all entries made by hand and written in ink. All corrections should be attested by the tenderer with his dated initials as many times as the corrections occur.
11. The contractor shall not in any case, after acceptance of a contract, be paid any extra charges for lead involved in transport of materials to site of work, erection and hire of T & P sheds for materials, royalty for earth, boulders, metal and sand etc. or for any increase in price of materials or for any increase in wages of labour or for any other reasons whatsoever. The prices shall be including all taxes, octroi, toll or on Work Contract Tax, royalty, Work Contract Tax, Service Tax on Labour and or material, Value added Tax or any other tax etc. and shall be payable by the contractor and no claim whatsoever in this respect shall be entertained.
12. **TENDERERS SHALL SEPARATLY MENTION IN THEIR FORWARDING LETTER THE PERCENTAGE OF VAT AND SERVICE TAX THEY HAVE CONSIDERED WHILE QUOTING RATES.**
13. The tender shall accompany the following information and schedules With Technical Bid -:
  - a. Company profile, copy of registration of firm / company,
  - b. Copies of VAT & Service tax certificates
  - c. A tentative Schedule showing the tenderer's proposed sequence of operations together with the estimated time for each activity.
  - d. Schedule of proposed Nurseries.
  - e. List of completed work similar in nature and magnitude to that covered in this tender.
14. Income Tax clearance should be attached with the Tender Documents.



15. The tenderer, whether he submits this tender or not, shall treat the details of the document as secret and confidential.
16. After acceptance of the LOI issued by the Institute, the tenderer shall execute an agreement on Rs.1,000/- (Rupees One thousand only) Non-judicial stamp paper within 10 days.
17. Tenders shall remain valid for acceptance for a period of Ninety days from the date of opening of the tenders.
18. Submission of Tender: The tender shall be submitted as per the procedure mentioned above. Tenders received late shall not be considered for selection.
19. This tender is not transferable.
20. Any further information can be obtained on application in writing to IITM.
21. The Director, Indian Institute of Tropical Meteorology, Pune, reserves the right to accept any tender in full or in part or to reject the lowest or any or all tenders without assigning any reasons.

Signature of Tenderer

Seal of Tenderer

Date:

Address:



SECTION - III

**LETTER OF OFFER**

### SECTION III - LETTER OF OFFER

(Note: Appendix hereto forms a part of this letter of offer)

To

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dear Sirs:

I/We do hereby tender for the execution of the work specified in the tender written memorandum within the time specified, at the rate specified therein and in accordance in all respects with the specifications, designs, drawings and Special Conditions of Contract and specifications issued -

#### Memorandum

- |     |                            |   |
|-----|----------------------------|---|
| [a] | General Description        | :Landscape works surrounding <b>Shishir Housing Complex</b> , at Indian Institute of tropical Meteorology, Pune |
| [b] | Earnest Money              | : Rupees Thirty five thousand only<br>: [RS. 35,000.00]   |
| [c] | Security Deposit           | : 5 % Of the Contract Value.  |
| [d] | Time allowed for the works | : Two months [02], from the date of receipt of LOI by IITM.   |

I/We hereby distinctly and expressly declare and acknowledge that before the submission of my/our tender I/We have carefully followed the general instructions and read the detailed specifications and schedule of quantities and clearly understood all the conditions of contract. I/We have also seen the location where the said work is to be done and made such investigations of the work required as to enable me/us to complete the work successfully.

I/We enclose herewith a Demand Draft No. \_\_\_\_\_ for RS. 35,000/- duly certified from the bank as good for payment as Earnest Money not to bear interest.

Should this tender be accepted in whole or in a part, I/We hereby agree to abide by and fulfill all the terms and conditions annexed hereto. If I/We fail to commence the work

specified in the above memorandum I/We agree that my/ our earnest money shall stand forfeited absolutely to the Employer otherwise the said earnest money shall be retained by the employer, towards total security deposit mentioned against column [c] of the above memorandum. I/We also agree to the balance retention money being deducted from my/our bills in accordance with the conditions of contract.

I/We agree to keep the offer open for 90 days from the date of opening the tender.

Yours faithfully,

SEAL

Signature of Contractor

Complete Address:

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Date: \_\_\_\_\_

## APPENDIX TO LETTER OF OFFER

Sr. No.	Description	Remarks
1.	Security Deposit	05% of the Contract value. In form of Bank Guarantee from a Nationalized Bank. Shall be refunded after completion of works and settlement of final bills.
2.	Minimum amount of Interim certificate	Not less than Rs. 6,00,000/-
3.	Retention Money	The Retention amount @ 10% of work order cost shall remain with the Institute for period of 12 months towards defect liability. However for this purpose BG of 10% amount from Nationalized / Scheduled Bank will be acceptable to the Institute. BG should be valid for 12 months period from the date of handing over the site by contractor to the Institute.
4.	Defects Liability Period	12 months from the date of hand over of the site by the contractor to the Institute
5.	Period of Commencement	On receipt of LOI
6.	Time of Completion	Entire work under contract to be completed in two calendar months
7.	Liquidated Damages	1% per week Maximum limited up to 5 % of contract value

Place:

Date:

Seal:

*[Signature of Tenderer]*

SECTION - IV

**SPECIAL CONDITIONS OF CONTRACT**

#### SECTION IV - SPECIAL CONDITIONS OF CONTRACT

1. Sealed tenders should be addressed to The Administrative Officer, Indian Institute Of Tropical Meteorology., Dr. Homi Bhabha Road, Pashan, Pune 411008,
2. No tender will be received after 12.15 Hrs on 17/10/2011 under any circumstances whatsoever.
3. Indian Institute of Tropical Meteorology, [referred to as "The IITM/The Client"] do not bind themselves to accept or reject any or all the tenders, either in whole or in part without assigning any reasons.
4. Within ten days of the receipt of intimation from the IITM of the acceptance of his/ their tender, the successful tenderer shall be bound to implement the contract by signing an agreement in accordance with the draft agreement and the schedule of conditions, but the written acceptance by the IITM of a tender will constitute a binding agreement between the IITM and the person so tendering whether such formal contract is or is not subsequently entered into.
5. The successful tenderer shall, within 10 days [ten days] of the receipt of letter of acceptance, furnish a Bank Guarantee from a Nationalized Bank, of an amount equal to five percent of the contract amount as a security deposit for the execution and this 5 % amount in form of Bank Guarantee shall form total Security deposit for the due fulfillment of the contract.
6. The successful tenderer/contractor must not assign the contract, nor sublet any portion of the contract, except with the written consent of the Institute.
7. Electric Power: The Institute shall give Electrical power for works at one location on chargeable basis.
8. Water: The IITM shall provide water at one location. The contractor shall take water from this location including conveying, all leads and lifts, transportation, storage by making temporary tanks, putting pumps for supply, electrical installation etc. complete at his own cost. In case of IITM is unable of supplying water due to any reason, contractor has to arrange water at his own cost and labour.
9. A schedule of probable quantities in respect of each work and specifications accompany these special conditions. The schedule of probable quantities is liable to alterations by omission, deductions or additions at the discretion of the Landscape architects. Each tender should contain not only the rates but also the cost of each item of work entered in a separate column and all the items should be totalled up in order to show the aggregate cost of the entire tender. All corrections in the tender schedule shall be attested by the initials of the tenderers. Corrections which are not attested may entail the rejection of the tender.



10. All items of works given in the schedule of quantities shall be executed in strict accordance with the relevant specifications read in conjunction with appropriate Indian Standard Specifications.
11. Successful completion of items specified in BOQs is inclusive of cost of material, labour, manpower, tools and plants. The tender should include all charges for double scaffoldings, centering materials, water and Electrical power charges, temporary plumbing, cost of cistern, hire for any tools and plants, sheds for materials, marking out and cleaning of site, and watering the concrete and the planted species as mentioned in the specifications. The rates quoted by the tenderer in the schedule of quantities will be deemed to be for the finished work to be measured in situ. The rates shall be inclusive of VAT, Service Tax, sales tax, general tax, Octroi duty, S.T. on W.C.T, E.S.I., P.F. etc. or any other duty levied by any government of public bodies. The rates shall be firm and shall not be subject to exchange variations, inflation, market fluctuations, labour conditions or any conditions whatsoever.
12. The calculations made by the tenderer should be based upon probable quantities of the several items of work, which are furnished for the tenderers convenience in the schedule of probable quantities. But it must be clearly understood that the contract is not a lump sum contract, that neither the probable quantities nor the cost of the individual items, nor the aggregate cost of the entire tender will form part of the contract and that the employer, does not in any way assure the tenderer, or guarantee that the said probable quantities are correct, or that the work would correspond thereto.
13. Time shall be considered as of the essence of the contract. The entire Works must be completed with in Two months from the date of receipt of LOI. The tenderer must give bar chart & state the periods within which he proposes to complete the several stages. The attention of the tenderer is drawn to Clause pertaining to liquidated damages for delay.
14. The successful tenderer is bound to carry out any and all items of work necessary for the completion of the job even though such items are not included in the quantities and rates. Schedule of instructions in respect of such additional items and their quantities will be issued in writing by IITM.
15. The contractor shall strictly observe the rules and regulations as prescribed under Contract Labour [Regulation and Abolition] Rules in force and in accordance with the Contract Labour [Regulation and Abolition] Act, 1970] and subsequent amendments if any. These will be periodically checked by the employer, and the tenderer will be fully responsible for violations.
16. The contractor shall be liable for and shall indemnify the IITM against any liability, loss, claim or proceedings whatsoever arising out of any statute or at a common law in respect of personal injury or the death of any person whatsoever arising out of or in the course of or caused by the carrying out of the works, unless due to any act or neglect of the IITM or of any person for whom IITM is responsible.

17. The contractor shall maintain and shall cause any sub-contractor to maintain:

- [a] Such insurance's as are necessary to cover the liability of the contractor or as the case may be of such sub-contractor, in respect of personal injuries or deaths arising out of or in the course of or caused by the carrying out of the work; and
- [b] Such insurance's as may be specifically required by the contract bills in respect of injury or damage to property real or personal arising out of or in the course of or by reason of the carrying out of the work, and caused by any negligence, omissions or default of the contractor, his servants or agents or, as the case may be of such sub-contractor, his servants or agents.

18. The contractor shall be paid solely on the basis of the rates quoted by him in the schedule/bill of quantities and rates, based on the joint measurements recorded of work actually carried out at site. Rates of extra items of work shall be settled as Actual material price + Actual Labour price + 15% overheads and profit.

- a. No escalation in rates, in any circumstances shall be allowed and paid.

19. Payment terms –

- a. RA bill of not less than Rs. 6 Lakhs each and final bill for balance work.
- b. 10% amount will be deducted from RA Bills towards the security deposit which will be refunded on completion of defect liability period. However the contractor can furnish BG of 10% of work order cost which should be valid for 12 months period from the date of handing over the site by contractor to the Institute.

20. This retention money / security deposit at (b) above shall remain with the institute till completion of defect liability period. After completion of defect liability period and on getting certification from the Institute that there is No defect to be rectified and all defects notified so far have been rectified, the retention shall be released.

21. All payments shall be adjusted towards RA bill. RA bill shall not be less than Rs.6,00,000/-

Date: \_\_\_\_\_

\_\_\_\_\_  
[Signature of Tenderer]

Witness: \_\_\_\_\_

Name and Address: \_\_\_\_\_

\_\_\_\_\_  
[Seal of the tenderer]

SECTION – V

**SPECIFICATIONS OF WORKS**

## SECTION V – SPECIFICATIONS OF LANDSCAPE WORKS

### **A. SCOPE OF WORK OF THE LANDSCAPE CONTRACTOR**

1. The landscape contractor will be provided with the existing ground available for landscape works.
2. All cost, wages of workers, equipment required for development of work will be born by the landscape contractor.
3. Electricity will be provided to the landscape contractor on chargeable basis.
4. The client will provide source of water at one point.
5. The landscape contractor shall provide experienced labour, all necessary equipments- with their maintenance, and materials to complete the job as specified herein.
6. In event of, any damage caused during the course of landscape work, to the electrical wiring, plumbing, paving or any such existing work or objects on site, the landscape contractor will make good, damage immediately, at his own expense and till the satisfaction of the client.
7. In case of any modification recurred in the proposed work on site, the landscape contractor shall bring it to the notice of the client and the landscape architect.
8. The landscape contractor will attend fortnightly meetings during the course of work as and when scheduled without fail, in addition to carrying out daily visit required for carrying out the work.
9. The landscape contractor shall take responsibility of the security and safety of the material, equipments and labour on site during execution.
10. The landscape contractor may before tendering, inspect the Site or otherwise make himself aware with the extent of the Contracts Works, the Site conditions, and all local conditions and restrictions likely to affect the execution of the work.
11. The Landscape contractor shall not cause any nuisance to the client during execution of landscape work.
12. The landscape contractor shall use water and electricity efficiently and shall close all the taps and electrical switches before leaving the site everyday, during the execution of landscape works.
13. The landscape contractor shall clean the site in all respects including removal of waste/debris from the site, before hading over of the completed site to the client.

14. The landscape contractor shall complete the job in the given time and as per the as per the specifications by providing sufficient labour and equipment.
15. The landscape contractor shall carry out work on site after the sun set and on Saturday evenings and Sundays unless otherwise specified/ allowed.
16. The landscape contractor shall take the responsibility of unloading the material, placing it at a proper identified position on site. The landscape contractor shall make necessary arrangements for the same on the site prior to unloading.
17. The landscape contractor shall place the unloaded plant species at a secured location on site.
18. The landscape contractor shall check the number, specifications and condition of the plant species unloaded as per the schedule of plants.
19. Workers/ labour of the landscape contractor will not be allowed to stay in any part of the site and the landscape contractor shall make the arrangements independently.
20. Watering the plants and the lawn regularly shall be the responsibility of the landscape contractor. Necessary labour, equipment, material for the same shall be arranged and managed by the landscape contractor.
21. Necessary arrangements shall be made by the landscape contractor for storing and securing the materials on site during execution.

**B. ELECTRICAL WORK, IRRIGATION AND CIVIL WORK**

1. All services related to outdoor electrical, irrigation and civil work shall be executed by the landscape contractor prior the to laying of the planting soil.
2. All labour, electrical fixtures, wiring, irrigation material, equipments, etc., necessary to complete the job shall be provided by the landscape contractor.
3. The electrical fixtures and the irrigation system shall be of standard make and the contractor shall get them approved from the client as and when required.
4. The landscape contractor shall carry out necessary civil work required as specified before laying the planting soil.
5. The landscape contractor shall check all the levels of the services in relation to the proposed finished surface levels.
6. Excavation in soil, sand or gravel, soft and hard murum/ filling of the soil, shall be carried out by the landscape contractor with his own labour and tools necessary for operation.

### **C. EXCAVATION AND PREPARATION OF GROUND FOR PLANTING**

1. Each tree shall be planted in position as shown on plan, in the pits measuring at least 900mm x 900mm x 900mm
2. Each shrub and creeper shall be planted in position in the pits measuring at least 600mm x 600mm x 600mm
3. Each ground cover shall be planted in position in the planting beds of minimum depth 300 mm.
4. Hedge shall be planted in a trench of size 600mm wide and 600mm deep.
5. All seasonal herbaceous, annuals and perennials shall be planted after the 600mm excavation.
6. For lawns, entire area shall be dug up to min 750mm and shall be filled with brick bat pieces of good quality before laying the planting soil to the final grade.
7. For aquatic species, planting requirements shall be executed as necessary.
8. Excavation in soil, sand or gravel, soft and hard murum/ filling of the soil, shall be carried out by the landscape contractor with his own labour and tools necessary for operation.
9. The landscape contractor shall prepare the ground for plantation with required grading, level and slope.
10. All pits and pots prepared for planting shall be filled with specified soil mixture.

### **D. PLANT MATERIAL**

- A. The landscape contractor shall supply species as specified in the schedule of plants.
- B. All plant species are to be supplied in varieties as per the specified schedule of plants.
- C. All species are to be well formed, healthy, transplanted or pot grown with vigorous sound roots true to type.
- D. Species, which do not meet the specifications, will be rejected by the Landscape Architect.
- E. The contractor shall convey the non-availability of any species /non-availability of its specified size/ height, if any to the Landscape Architect, and shall not replace any species without informing the landscape consultant in writing to IITM and to the Landscape Architect.

#### **E. SOIL MIXTURE FOR PLANTING**

1. The entire planting shall be done in refilled pits or trenches or pots containing a well mixed composition of the following ingredients:
  - a. Planting soil(*poita*)- 3parts
  - b. Organic manure-1 part
2. Planting soil shall be loamy, properly screened of granules, to suit the type of plants, containing adequate humus; free from weeds, stones, pebbles.
3. The contractor shall use only good quality organic manure for supplementing of plant nutrients and bio-pesticides for insects and pest management except in emergency use.
4. List and approximate quantity of the material for the composition of soil mixture used, shall be given by the landscape contractor.
5. In case of presence of black cotton soil on site, 4" thick layer of brick bat or soft murum- shall be laid to slope of 2% before laying planting soil.
6. The stacking of organic manure and planting soil shall be done in a protected location and the downloading of soil shall be done as close as possible to the plating location.
7. The remaining soil if any after plantation shall be stacked properly in protected location.

#### **F. PLANTING OF LAWN**

1. Planting of all species shall be done after getting the lineout on site approved by the Landscape Architect by placing the plants at their respective locations as per the planting plan.
2. The positioning, location and pattern of planting to be approved by the Landscape Architect.
3. In case of presence of black cotton soil on site, 4" thick layer of brick bat or soft murum- shall be laid to slope of 2% before laying the specified depth of planting soil.
4. The cultivation of lawn shall consist of excavation of the area, refilling with soil mixture over 100 mm thick brick bat which shall be supplied and spread by the landscape contractor.
5. The soil mixture shall be laid to proper slopes (minimum 2%) for surface drainage. The soil shall be properly raked and watered thoroughly before dibbling the lawn.
6. Planting of lawn of specified type shall be of good quality rooted grass and shall be planted by dibbling method.

7. The lawn shall be maintained and the gaps shall be repaired till it gets a uniform carpet.
8. The landscape contractor shall be required to do proper top dressing, rolling and periodically hand cutting or machine mowing during the defects liability period in order to maintain the lawn in perfect condition.
9. The landscape contractor shall establish the lawn to its required level, shape, slope and proper state, till it gets established for the next one year of defects liability period. He shall replace/ reestablish the damaged or un-grown patches as required from time to time.

#### **G. MISCELANEOUS**

1. Each tree shall be secured erect with minimum three numbers of stout / straight stakes with average diameter 50mm; these stakes shall be of soft wood or bamboo and should have a clear height of 6feet above the ground and 2 feet below the ground. They shall remain in position till the tree gets established to its proper position, till the completion of defects liability period
2. One of the stakes shall be driven in to the hole before the tree is planted and the tree is secured to the bottom of the branch.
3. The rest tie shall be secured loosely to a tree as high of the stake as practicable.
4. The tree/ shrub pits shall be refilled with soil mixture after planting is done.
5. The shrubs shall be supported if necessary with diagonally driven sticks.
6. Necessary clipping and support shall be provided for creepers.
7. Pruning the branches of existing trees on site shall be done as specified and applying a solution for stopping the irregular growth of the cut branch.
8. Repotting/ shifting the existing shrubs shall be done to their specified location.
9. Planted plots shall be placed to the required location.
10. The procured pebbles shall be of uniform size, colour and shape as specifies, and shall be washed with clean water before placing on the required position.
11. The landscape contractor shall protect the species (which are stored and planted) from coming in contact with civil construction materials such as cement, acids, colours, etc..
12. Watering and taking care of the planted species including lawn till they get established in place, ensuring the proper positioning of supports, de-weeding, cleaning of site due to planting work, shall be carried out by the landscape contractor on daily basis.



#### **H. DEFECTS LIABILITY PERIOD**

1. The defects liability period will be for one year after the virtual completion of work which is handing over of the site to the client. On start of the defect liability period contractor has to provide free maintenance for 6 months.
2. Defects liability period will commence only after obtaining a certificate from the client, confirming the virtual completion of the landscape work.
3. Within the defects liability period, any dead/ damaged species/ lawn, shall be replaced and any fault in electrical/ irrigation work shall be repaired by the landscape contractor.
4. For virtual completion of the work, the landscape shall give in writing, the date of handing over.
5. The Landscape contractor shall visit the work periodically within the defects liability period after handing over the site.

#### **I. MAINTENANCE**

1. The maintenance contract period shall start at the end of the defects liability period for the Contractor.
2. Scope and conditions for Maintenance contract for landscape works will be decided by the IITM; therefore the tenderer shall submit the quote separately which includes the following:
  - a. Maintenance cost with cost of labour, material, equipment, expertise, site visits
  - b. Taking care of labour and equipment on site
  - c. Providing full time Gardener on site on daily basis for specified hours dedicated to the specified area as per contract
  - d. List of works covered/ scope of work-
    - i. Maintenance includes maintenance of species, lawn, electrical work and irrigation work
    - ii. Watering the plants on daily basis
    - iii. De-weeding
    - iv. Reestablishing damaged lawn patches
    - v. Maintaining water saucer around the planted trees
    - vi. Maintaining the coco-pit-sheets to proper position on soil slopes

- vii. Periodically Enhancing the soil with organic manure
- viii. Providing and maintaining supports to creepers
- ix. Diseases and pest control for planted species and supplying required material for the same
- x. Cleaning of pathways in case of spilling over of planting soil
- xi. Period of maintenance contract – one year

**J. CRITERIA FOR SELECTION OF THE HORTICULTURE CONTRACTOR**

- a. The contractor should have completed works of similar scale and magnitude in last 5 years.
- b. The contractor should have technical knowhow and site supervisors who can read the Landscape Architect's Drawings.
- c. The contractor should have submitted appreciation letters for successful completion and maintenance of landscape work, received from at least two clients.
- d. The contractors should have experience in the field of execution of landscape projects at least of five years.
- e. The contractor having their own plant nursery set up shall be preferred.
- f. The contractor should have excellent infrastructure in terms of labour, equipment, transport facility and trained experienced malis / gardeners.
- g. The final selection of the contractor shall be done by the selection committee of IITM, on inspecting the profile and the past works completed by the contractor, who has submitted the completed tender document.

SECTION - VI

**BILL OF QUANTITIES**

Project: Landscape Development for area surrounding SHISHIR HOUSING at Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune 411008.							
BILL OF QUANTITIES for softscape development- 070911							
Sr. no.	Description	Quantity	Rate in Rupees		Unit	Amount in Rupees	
			In words	In Number		In words	In Number
1.00	<b>Preparation for Planting</b>						
1.1	Providing, supplying, spreading & laying approved sub-base material Course soil for making earth mounds, for making sub-base for lawn including all material, labour, transport, loading, unloading, laying the earth mound to required slope, grades and stabilizing it by filling, compacting and watering in layers not more than 15 to 20 cms etc complete	1.00			Cum		
1.2	Fine Grading the ground with planting soil as per required slopes as directed by Architect as per the architect's drawing, including labour, material, compacting ,etc.complete	1.00			Sqm		
1.4	Providing material, supplying, spreading, laying and fine grading the ground (as per required slopes as directed by the landscape architect) with approved mixture and depth of planting soil and organic manure in a specified proportion of three parts of soil and one part of approved organic manure including labour, loading, unloading, mixing, spreading, levelling, watering etc complete	1,300.00			cum		
	1300cum= 460 brass						
	Total for preparation of planting						
2.0	Providing, laying and planting lawns of specified class and type including supplying lawn, planting, including all material, labour, transport, loading, unloading, de-weeding, laying the earth to required slope, grades, planting the lawn and stabilizing it by filling in layers watering etc complete						
2.1	<i>Paspalum notatum/ Paspalum/laki patti- by dibbling method</i>	265.00			sqm		
2.2	<i>Zoysia matrella/ korean velvet/ taiwan lawn, in slabs of size 1' X 2'</i>						
	east side- parking side	875.0			sqm		
	west side- phase-2 side	660.0			sqm		
	Total for lawn	1,800.0			sqm		

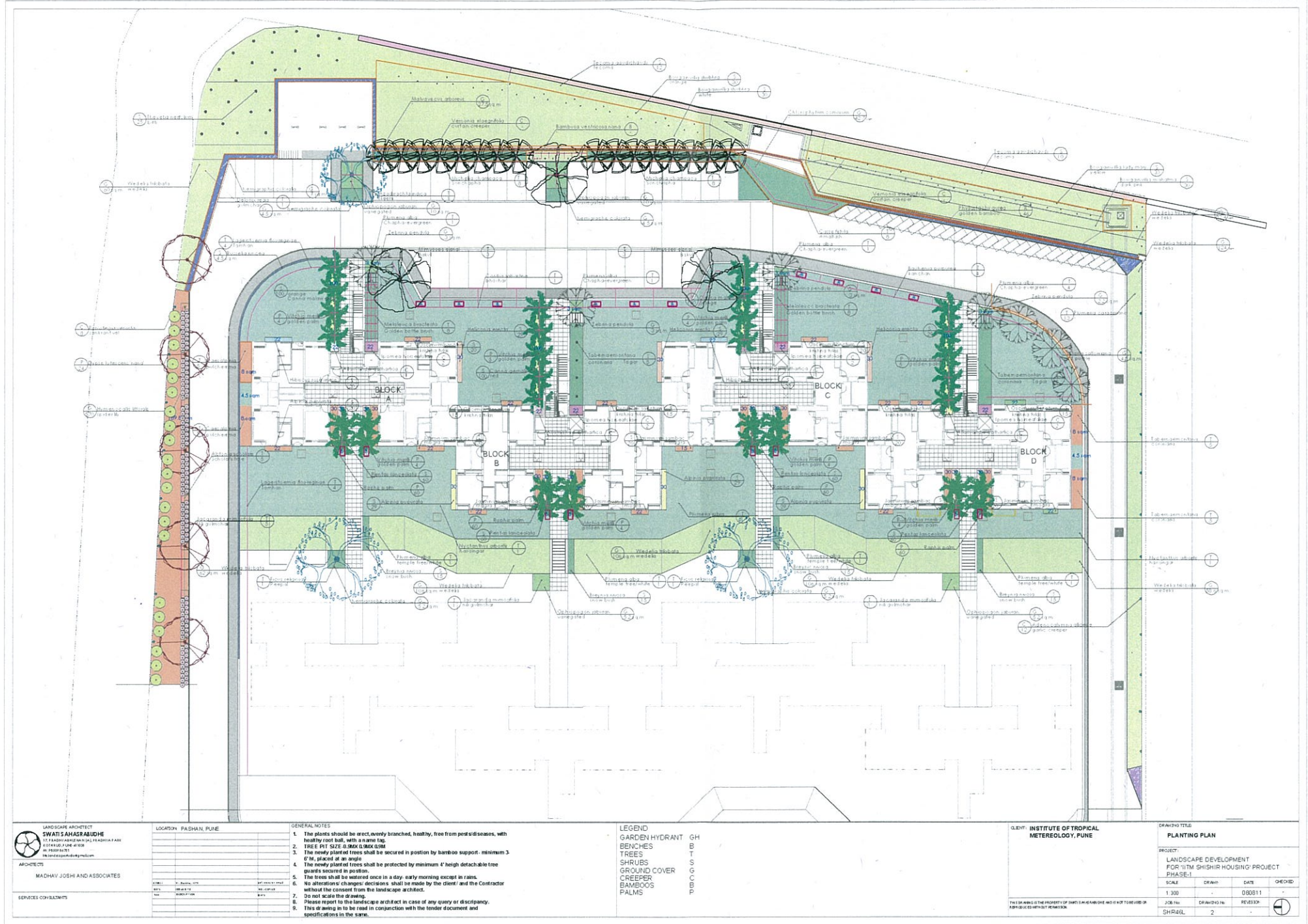


Sr. no.	Description	Quantity	Rate in Rupees		Unit	Amount in Rupees	
			In words	In Number		In words	In Number
5.0	Providing and supplying plant material as per following list						
5.1	<b>TREES</b>						
5.1.1	Alistonia Scholaris/ Satwin, Saplaparni/ Scholar's tree @ 2 m height	5.00			Number		
5.1.2	Amherstia nobilis/ Urvashi @ 1 m ht.	3.00			Number		
5.1.3	Azadirachta indica/ neem @ 2.0 m height	1.00			Number		
5.1.4	Bauhenia purpurea/ Kanchan @ 2.0 m height	4.00			Number		
5.1.5	Cassia fistula/ Amaltash/ Indian Laburnum @ 1.8 m height	8.00			Number		
5.1.6	Cordia sabastina/ Bhokhar @ 1.5 m ht.	6.00			Number		
5.1.7	Ficus religiosa/ peepal tree @ 2.0 m height	2.00			Number		
5.1.8	Jacaranda mimosifolia/ Nili Gulmohar @ 1.8 m height	7.00			Number		
5.1.9	Lagerstroemia flos-reginae/ Tamhan @ 1.8 m height	8.00			Number		
5.1.10	Melaleuca bracteata/ Golden bottle brush @ 1.8 m height	16.00			Number		
5.1.11	Michelia champaca/ Sonchapha @ 1.8 m height	16.00			Number		
5.1.12	Mimusops elengi/ Bakul @ 2.0 m height	3.00			Number		
5.1.13	Nyctanthus arbor-tristis/ Prejakata/ Har-singar	2.00			Number		
5.1.14	Plumeria alba/ temple tree @ 1.5 m height	10.00			Number		
5.1.15	Plumeria caracasana @ 1.5 m height	13.00			Number		
5.1.16	Plumeria rubra/ Temple tree @ 1.5 m height	2.00			Number		
5.1.17	Delonix regia / Gulmohar @ 2 m ht.	1.00			Number		
5.1.18	Plumeria aculifolia, @ 1.5 m height	2.00			Number		
		109.00					
5.2	<b>PALMS</b>						
5.2.1	Dypsis lutescens 'nana' @ 1.00 m, ht.	24.00			Number		
5.2.3	Raphis exelsa- palm @ 0.6 m ht.	167.00			Number		
5.2.4	Veitchia merillii/ golden palm/ manila palm/ christmas palm @ 2m height	34.00			Number		
		225.00			Number		

Sr. no.	Description	Quantity	Rate in Rupees		Unit	Amount in Rupees	
			In words	In Number		In words	In Number
<b>5.3</b>	<b>SHRUBS</b>						
5.3.1	Alamand nerifolia nana	150.00			Number		
5.3.2	Alpinia purpurata	123.00			Number		
5.3.3	Bougainvillea formosa- purple	120.00			Number		
5.3.4	Bougainvillea lady mary- yellow	50.00			Number		
5.3.5	Bougainvillea mahatma-dark pink	25.00			Number		
5.3.6	Bougainvillea shubhra- orange	25.00			Number		
5.3.7	Bougainvillea shubhra- white	25.00			Number		
5.3.8	Canna malawiensis - variegated- orange flowers @ 0.75 m height	198.00			Number		
5.3.9	Canna -red @ 0.75 m height	198.00			Number		
5.3.10	Hibiscus- white	19.00			Number		
5.3.11	Hibiscus-rosa-sinesis	19.00			Number		
5.3.12	Hymenocallis littoralis/ spider lily	570.00			Number		
5.3.13	Jasminum sambac/Mogra	130.00			Number		
5.3.14	Oscimum sanctum/ Kishna tulas	130.00			Number		
5.3.15	Russelia juncea	60.00			Number		
5.3.16	Tabernaemontana coronaria- L	10.00			Number		
5.3.17	Tecoma gaudichaudi- L	22.00			Number		
5.3.18	Thevetia nerifolium/ bitli	25.00			Number		
5.3.19	Breynia nivasa/snow bush	60.00			Number		
5.3.20	Caesalpinia	10.00			Number		
5.3.21	Malaviscus arboreus/mirch jaswand	220.00			Number		
5.3.22	Pentas lanceolata	167.00			Number		
5.3.23	Tabernaemontana double	10.00			Number		
5.3.24	Heliconia erecta	87.00			Number		
		<b>2453.00</b>			Number		
<b>5.4</b>	<b>GROUND COVERS- slopes along compound walls- north,south, east sides1493-SQM, slopes between phase 1 and 2-440 SQM</b>						
5.4.1	Chlorophytum comosum, @0.1 c/c	5,523.00			Number (42.75sq.m)		
5.4.2	Hemigraphis colorata, @0.1 c/c	3,794.00			Number (25.95sq.m)		
5.4.3	Lantana sallowiana- lighth purple, @0.1 c/c	60.00			Number (4.4sq.m)		
5.4.4	Ophiopogon jaburan- variegated @ 0.1 c/c	1,923.00			Number (18.6sq.m)		
5.4.5	Wedelia trilobata, cutting, @ 0.2 c/c	25,250.00			Number (623.4sq.m)		
5.4.6	Zebrina pendula, @0.1 m c/c	800.00			Number (8.5sq.m)		
		<b>37,350.00</b>			Number		
<b>5.5</b>	<b>CREEPERS</b>						
5.5.1	Adenocalymna alliceae / Garlic creeper	12.00			Number		
5.5.2	Allamanda cathartica	4.00			Number		
5.5.3	Bignonia gracilis / Waghnaeki	4,000.00			Number		
5.5.4	Cestrum nocturnum / Rat rani	2.00			Number		
5.5.5	Clematis gouriana/ ranjai	5.00			Number		
5.5.6	Ficus pumila / Waghnaeki	50.00			Number		
5.5.7	Ipomea horsefoliae	8.00			Number		
5.5.8	Jasminum officinalis / chameli	2.00			Number		
5.5.9	Piper betel/ Maghai pan	4.00			Number		
5.5.10	Pyrostegia venusta/ sankranti vel	8.00			Number		
5.5.11	Vernonia elaeagnifolia/ curtain creeper	790.00			Number		
		<b>4,885.00</b>			Number		
<b>5.6</b>	<b>BAMBOOS</b>						
5.6.1	Bambusa Ventricosa - nana @ 1.00 m height	15.00			Number		
5.6.2	Phyllostachys aurea/ golden bamboo @ 1m ht.	46.00			Number		
		<b>61.00</b>			Number		
	<b>Total for plants supply</b>						
	<b>Total of All sections</b>						

SECTION - VII  
**DRAWINGS**





LANDSCAPE ARCHITECT  
**SWATI S. AHASRABUDHE**  
 112, KADAMBAWADI, PUNE  
 ARCHITECTS  
**MADHAV JOSHI AND ASSOCIATES**  
 SERVICES CONTRACTORS

LOCATION: PASHAN, PUNE

DATE	NO.	BY	REVISION

- GENERAL NOTES
1. The plants should be erect, evenly branched, healthy, free from pests/diseases, with healthy root ball, with a strong tap.
  2. TREE PIT SIZE 0.80X0.80X0.80M
  3. The newly planted trees shall be secured in position by bamboo support - minimum 3" dia, placed at an angle.
  4. The newly planted trees shall be protected by minimum 4' high detachable tree guards located in position.
  5. The trees shall be watered once in a day, early morning except in rains.
  6. No alterations/changes/decisions shall be made by the client and the Contractor without the consent from the landscape architect.
  7. Do not scale the drawing.
  8. Please report to the landscape architect in case of any query or discrepancy.
  9. This drawing is to be read in conjunction with the tender document and specifications to the same.

LEGEND

GARDEN HYDRANT	GH
BENCHES	B
TREES	T
SHRUBS	S
GROUND COVER	G
CREEPER	C
BAMBOOS	B
PALMS	P

CLIENT: INSTITUTE OF TROPICAL METEOROLOGY, PUNE

DRAWING TITLE

**PLANTING PLAN**

PROJECT	LANDSCAPE DEVELOPMENT FOR 'ITM SHISHIR HOUSING' PROJECT PHASE-I
SCALE	1:300
DRAWN	SHRAGL
DATE	08/08/11
CHECKED	
JOB NO.	DR/SH/11/01
REVISION	2

NAME OF THE WORK - LANDSCAPE WORKS SURROUNDING SHISHIR HOUSING COMPLEX AT INDIAN INSTITUTE OF TROPICAL METEOROLOGY, Dr. HOMI BHABHA ROAD, PASHAN, PUNE 411008		
NAME OF CLIENT - INDIAN INSTITUTE OF TROPICAL METEOROLOGY, DR. HOMI BHABHA ROAD, PASHAN, PUNE 411008		
MINUTES OF PRE BID MEETING HELD AT INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE ON 04.10.11 AT 11.30 AM		
SR. NO.	ITEM DESCRIPTION FROM TENDER DOCUMENT / QUERY RAISED	PRE BID MEETING DECISION/ CLARIFICATION
1	TECHNICAL BID- page 15- clause-F3 and E 5	4" thk layer of brick bat or soft murum is not required for the landscape area considered.
2	TECHNICAL BID- page 17- clause-H1( Free maintainance period as 6 months is to be read as 12 months/ 1 year)	Contractor shall provide free maintenance during defects liability period of one year.
3	TECHNICAL BID- page 17-Maintenance after defects liability period	Total area for Landscape works- 4262 sqm.
		The tenderer shall submit the quote seperately for the following as per the revised BOQ:1. Maintenance quote for first one year after defects liability period is over , 2. Maintenance quote for 2nd year, 3. Maintenance cost for third year. All quotes shall be based on area for landscape works including details as specified in the technical bid.
4	Drawing attached with the tender document on the website is not readable.	<b>A3 size pdf format copy will be emailed to all tenderers for reference along with revised BOQ and will be also uploaded on the institute's website.</b>
5	BOQ- NEW ITEM - PLINTH PROTECTION. (Not included in tender - BOQ)	specification for plinth protection item is as follows : <i>(Providing plinth protection all along the periphery of the building, Making plinth protection 22" wide (machine cut) of 40 mm thk dressed shahabad stone (sample of stone shall be approved by Landscape Architect and the site engineer in charge)over 20 mm-average thick base of cement mortar 1:4- 1 cement:4 coarse sand, laid and jointed with grey cement slurry over 50mm thick of cement concrete 1:3:6(1 cement: 3 coarse sand: 6 graded stone aggregate 20mm nominal size) over 75mm bed of coarse aggregate of 40 mm nominal size rammed and consolidated , laid with a minimum outward slope of 1 in 50, etc.including necessary excavation and form work wherever required complete ). The specifications will be included in the revised BOQ, which will be consequently emailed to the tenderers and also will be uploaded on the Institute's website.</i>
6	BOQ- NEW ITEM - PREPARING SITE FOR PLANTATION.(Not included in tender - BOQ)	Preapring site for plantation (before spreading the planting soil) including cleaning of any debris, including labour, equipment, carriage,disposal of unservicable material etc.complete. Approximate area- 4262 sqm
7	BOQ- related service tax	A point was raied that the revised BOQ needs to be prepared in two separate parts viz <b>part- A-softscape and Part- B- hardscape and Part C- Maintainance after defects liability period</b> , since a new Item of ' plinth protection was announced to be added in the meeting. For softscape no service tax is applicable. For hardscape VAT and service tax are applicable.The tenderers shall quote taxes as per revised BOQ format.

SR. NO.	ITEM DESCRIPTION FROM TENDER DOCUMENT / QUERY RAISED	PRE BID MEETING DECISION/ CLARIFICATION	
8	BOQ- 4.4- BENCHES	Specifications for the bench as per revised BOQ.	
9	BOQ- row below 2.2, row below 5.2.4, row below 5.3.24, row below 5.5.11, rows below 5.6.2	These rows to be removed from BOQ, to avoid confusion. The tenderes shall submit the quote as per revised BOQ	
10	BOQ- 4.2- Pruning of branches of existing trees if needed needed	the item will be specified in detail and quantity will be revised in the revised boq.	
11	BOQ- 4.3 - Transplantation / shifting of existing plants to desired location	the item will be specified in detail and quantity will be revised in the revised boq.	
12	BOQ- page 3- 5.0- Providing and supplying PLANT MATERIAL	Details specifications related to plant specifications including type and characteristic of branching will be included in the revised boq. It was informed to the tenderers that, all plant material and planting soil provided shall of very good quality and as per the standard norms for each type of plant specie. The plant material procured shall be rejected by IITM or by the landscape architect if found not of the desired quality. All plant material referring to the same type of specie shall be of uniform size, girth,age, height and specifications at the time of plantation on site.	
13	BOQ- page-1- 1.4- Providing and supplying material, laying,spreading and fine grading the ground (as per required slopes as directed by the landscape architect)with approved mixture and depth of planting soil and organic manure in a specified proportion of three parts of soil and one part of approved organic manure including labour, loading, unloading, mixing, spreading, levelling, watering etc complete	Unit of measurement for the planting soil given is cum. The quantity shall be measured as per the cum on site after spreading the soil in place as required and shall not be measured as per the truck load.	
14	Query raised - Can the Planting Soil be red soil?	The planting soil shall be of sandy loam type -locally known as' Poita Soil', with good humus content.	
15	Awarding the wok to tenderer	Cost comparison will be made for Part- A, and Part B Together to award the work., including applicable taxes. Cost for Part - C shall be considered separately. The IITM reserves all rights to select/ reject any of the tenders.	

Project: Landscape Development for area surrounding SHISHIR HOUSING at Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune 411008.							
BILL OF QUANTITIES for softscape development- 07.10.11-revised as per pre-bid MOM held on 04.10.11 at ITM							
Sr. no.	Description	Quantity	Rate in Rupees		Unit	Amount in Rupees	
			In words	In Number		In words	In Number
<b>Part A- Softscape</b>							
<b>1.00</b>	<b>Preparation for Planting</b>						
1.1	Providing, supplying, spreading & laying approved sub-base material Course soil for making earth mounds,for making sub-base for lawn including all material, labour, transport, loading, unloading, laying the earth mound to required slope, grades and stabilizing it by filling, compacting and watering in layers not more than 15 to 20 cms etc complete	1.00			Cum		
1.2	Fine Grading the ground with planting soil as per required slopes as directed by Architect as per the architect's drawing, including labour, material, compacting ,etc.complete	1.00			Sqm		
1.5	Preapring site for plantation (before spreading the planting soil) including cleaning of any debris, including labour, equipment, carriage,disposal of unservicable material etc.complete (area- approximate 4262 sqm	1.00			Job		
1.4	Providing and supplying material, laying,spreading and fine grading the ground (as per required slopes as directed by the landscape architect)with approved mixture and depth of planting soil and organic manuare in a specified proportion of three parts of soil and one part of approved organic manuare including labour, loading, unloading, mixing, spreading, levelling, watering etc complete	1,300.00			cum		
2.0	Providing, laying and planting lawns of specified class and type including supplying lawn, planting, including all material, labour, transport, loading, unloading, de-weeding,laying the earth to required slope, grades, planting the lawn and stabilizing it by filling in layers watering etc complete.						
2.1	<i>Paspalum notatum/ Paspalum/taki patti- by dibbling method</i>	265.00			sqm		
2.2	<i>Zoysia matrella/ korean velvet/taiwanlawn, in slabs of size 1' X 2'</i>						
	east side- parking side	875.0			sqm		
	west side- phase-2 side	660.0			sqm		

Sr, no.	Description	Quantity	Rate in Rupees		Unit	Amount in Rupees	
			In words	In Number		In words	In Number
3.0	Planting the supplied trees, palms, shrubs, creepers, ground covers, plants at the required position, including labour, equipment,excavating specified size pits / trench in soft/hard murum on site, putting mixture of earth and organic manure in specified proportion in the pits in layers, planting, proiding supports,watering etc complete						
3.1	planting of trees/palms	334.00			Number		
3.2	planting of large shrubs	0			Number		
3.3	planting of small/ medium shrub	2453			Number		
3.4	planting of creepers	4,885.00			Number		
3.5	planting of ground covers	37,350.00			Number		
4.00	<b>Miscellaneous</b>						
4.1	Providing and erecting Supports for new plantation as specified	100.00			Job		
4.2	Pruning of branches of existing trees if needed(girth of branch- 3" to 6")	5.00			Number		
4.3	Transplantation/ shifting of existing plants to desired location( spread - 1- 3 m, ht- max 4m)	2.00			Number		
5.0	<b>Providing and supplying plant material as per following list</b>						
5.1	<b>TREES</b>						
5.1.1	AlstoniaScholaris/Satwin,Saptaparni/Scholar's tree @ 2 m height , uniform branching starting at 1m ht, erect, straight main branch	5.00			Number		
5.1.2	Amherstia nobilis/ Urvashi @ 1 m ht., uniform branching starting at 0.5m ht, erect	3.00			Number		
5.1.3	Azadirachta indical neem @ 2.0 m height, uniform branching starting at 1m ht., erect	1.00			Number		
5.1.4	Bauhenia purpurealKanchan @ 2.0 m height,uniform branching starting at 1m ht., erect, straight main branch	4.00			Number		
5.1.5	Cassia fistulal Amaltash/ Indian Laburnum @ 1.8 m height,uniform branching starting at 1m ht.,erect, straight main branch	8.00			Number		
5.1.6	Cordia sabastinal Bhokhar @ 1.5 m ht.,uniform branching starting at 1m ht.erect, straight main branch	6.00			Number		
5.1.7	Ficus religiosa/ peepal tree@ 2.0 m height,uniform branching starting at 1m ht.erect, straight main branch	2.00			Number		
5.1.8	Jacaranda mimosifolia/ Nili Gulmohor @ 1.8 m height,uniform branching starting at 1m ht.,erect, straight main branch	7.00			Number		
5.1.9	Lagerstroemia flos-reginae/Tamhan@ 1.8 m height,,uniform branching starting at 1m ht., which is about to flower this season,erect, straight main branch	8.00			Number		
5.1.10	Melaleuca bracteata/ Golden bottle brush@ 1.8 m height, erect, no tilt	16.00			Number		

Sr. no.	Description	Quantity	Rate in Rupees		Unit	Amount in Rupees	
			In words	In Number		In words	In Number
5.1.11	<i>Michelia champaca/ Sonchapha@ 1.8 m height,erect, straight main branch, grafted variety</i>	16.00			Number		
5.1.12	<i>Mimusops elengi/Bakul@ 2.0 m height,uniform branching starting at 1m ht., which is about to flower this season,erect, straight main branch</i>	3.00			Number		
5.1.13	<i>Nyctanthus-arbor-tristis/Prajakata/Harsingar,erect, straight main branch, lower level branching</i>	2.00			Number		
5.1.14	<i>Plumeria alba/temple tree @ 1.5 m height, minimum 3 branches at different heights, which is about to flower after planting, euqal spread of branches in all 360 degrees, all branches having leaves at the apex.,main branch heigher than other branches, no cut branches</i>	10.00			Number		
5.1.15	<i>Plumeria caracasana @1,5 m height, minimum 3 branches at different heights, which is about to flower after planting, euqal spread of branches in all 360 degrees, all branches having leaves at the apex.,main branch heigher than other branches, no cut branches</i>	13.00			Number		
5.1.16	<i>Plumeria rubra Temple tree@ 1.5 m height, which is about to flower after planting, euqal spread of branches in all 360 degrees, all branches having leaves at the apex.,main branch heigher than other branches, no cut branches</i>	2.00			Number		
5.1.17	<i>Delonix regia / Gulmohar @ 2 m ht.uniform branching starting at 1m ht., which is about to flower this season,erect, straight main branch</i>	1.00			Number		
5.1.18	<i>Plumeria acutifolia,@ 1.5 m height,which is about to flower after planting, euqal spread of branches in all 360 degrees, all branches having leaves at the apex.,main branch heigher than other branches, no cut branches</i>	2.00			Number		
5.2	<b>PALMS</b>						
5.2.1	<i>Dypsis lutescens 'nana' @ 1.00 m,ht., with minimum 4 branching cluster at the base, well formed green leaves</i>	24.00			Number		
5.2.3	<i>Raphis exelsa-palm @ 0.6 m ht., with low branching cluster</i>	167.00			Number		
5.2.4	<i>Veitchia merillii/ golden palm/manila palm/chrismas palm@ 2m height, with all levaeas present, girth of uniform size and colour</i>	34.00			Number		

Sr. no.	Description	Quantity	Rate in Rupees		Unit	Amount in Rupees	
			In words	In Number		In words	In Number
<b>5.3</b>	<b>SHRUBS</b>						
5.3.1	Allamanda nerifolia nana	150.00			Number		
5.3.2	Alpinia pupurata	123.00			Number		
5.3.3	Bougainvillia formosa- purple	120.00			Number		
5.3.4	Bougainvillia lady mary- yellow	50.00			Number		
5.3.5	Bougainvillia mahatma-dark pink	25.00			Number		
5.3.6	Bougainvillia shubhra- orange	25.00			Number		
5.3.7	Bougainvillia shubhra- white	25.00			Number		
5.3.8	Canna malawiensis - variegated- orange flowers @ 0.75 m height	198.00			Number		
5.3.9	Canna -red @ 0.75 m height	198.00			Number		
5.3.10	Hibiscus- white	19.00			Number		
5.3.11	Hibiscus-rosa-sinesis	19.00			Number		
5.3.12	Hymenocallis littoralis/ spider lily	570.00			Number		
5.3.13	Jasminum sambac/Mogra	130.00			Number		
5.3.14	Oscimum sanctum/ Kishna tulas	130.00			Number		
5.3.15	Russelia juncea	60.00			Number		
5.3.16	Tabernaemontana coronaria- L	10.00			Number		
5.3.17	Tecoma gaudichaudi- L	22.00			Number		
5.3.18	Thevetia nerifolium/ bitti	25.00			Number		
5.3.19	Breynia nivasa/snow bush	60.00			Number		
5.3.20	Caesalpinia pulcherima - pink	10.00			Number		
5.3.21	Malaviscus arboreus/mirch jaswand	220.00			Number		
5.3.22	Pentas lanceolata	167.00			Number		
5.3.23	Tabernaemontana double	10.00			Number		
5.3.24	Heliconia erecta	87.00			Number		
<b>5.4</b>	<b>GROUND COVERS-</b>						
5.4.1	Chlorophytum comosum, @0.1 c/c	5,523.00			Number		
5.4.2	Hemigraphis colorata, @0.1 c/c	3,794.00			Number		
5.4.3	Lantana sallowiana- ligh purple, @0.1 c/c	60.00			Number		
5.4.4	Ophiopogon jaburan- variegated @ 0.1 c/c	1,923.00			Number		
5.4.5	Wedelia trilobata, cutting, @ 0.2 c/c	25,250.00			Number		
5.4.6	Zebrina pendula, @0.1 m c/c	800.00			Number		
<b>5.5</b>	<b>CREEPERS</b>						
5.5.1	Adenocalymna alliceae / Garlic creeper	12.00			Number		
5.5.2	Allamanda cathartica	4.00			Number		
5.5.3	Bignonia gracilis / Waghnaakhi	4,000.00			Number		
5.5.4	Cestrum nocturnum / Rat rani	2.00			Number		
5.5.5	Clematis gouriana/ ranjai	5.00			Number		
5.5.6	Ficus pumila / Waghnaakhi	50.00			Number		
5.5.7	Ipoemea horseaefoliae	8.00			Number		
5.5.8	Jasminum officinalis / chamoli	2.00			Number		
5.5.9	Piper betel/ Maghai pan	4.00			Number		
5.5.10	Pyrostegia venusta/ sankrant vel	8.00			Number		







## Garden Bench :( Specification)



**Model Number:** BN-41

**Size:** (60"x18"x36")

**Material:** (Granite)

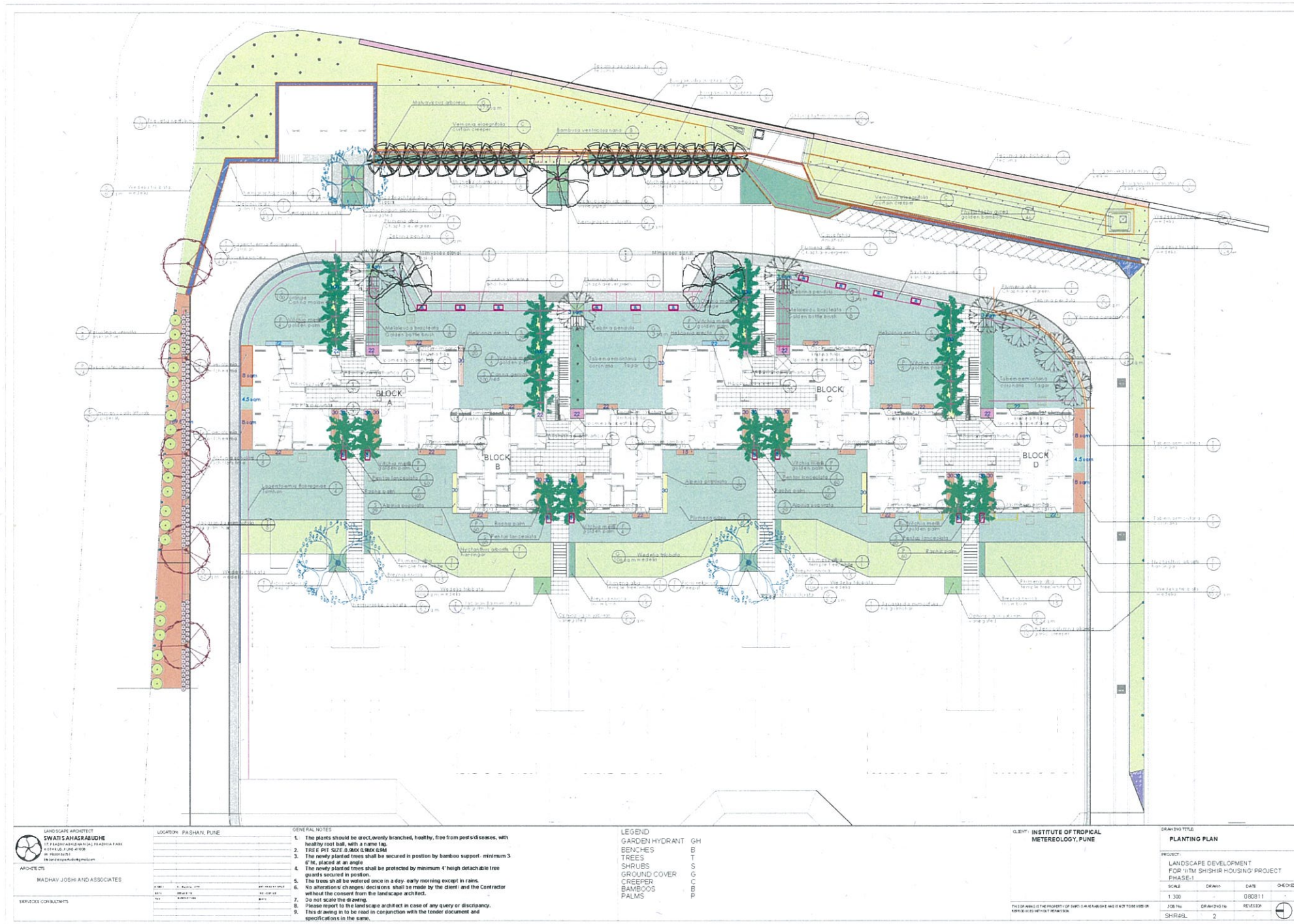
**Style:** Classic

**Specifications:** This Attractive Decorative Garden bench is made in natural Indian Granite.

**Brand Name:** Dhara-Bench

**Packaging Detail:** Wooden box packing with thermocol sheet as per international standard.

**Delivery Detail:** Delivery at work site (IITM, Pune).



LANDSCAPE ARCHITECT  
**SWATI SAHASRABUDHE**  
 10, RAJAWADE ROAD, PUNE 411 004  
 ARCHITECTS  
**MADHAV JOSHI AND ASSOCIATES**

LOCATION: PANDHAR, PUNE

DATE	NO.	DESCRIPTION

- GENERAL NOTES
1. The plants should be erect, overly branched, healthy, free from pests/diseases, with healthy root ball, with a stem tag.
  2. TREE & SHRUB SIZE: 0.00X 0.00X 0.00M
  3. The newly planted trees shall be secured in position by bamboo support - minimum 3-6" dia, placed at an angle.
  4. The newly planted trees shall be protected by minimum 4' high detachable tree guard & mulched in garden.
  5. The trees shall be watered once in a day, early morning except in rains.
  6. No alterations/changes/decisions shall be made by the client and the Contractor without the consent from the landscape architect.
  7. Do not scale the drawing.
  8. Please report to the landscape architect in case of any query or discrepancy.
  9. This drawing is to be read in conjunction with the tender document and specifications in the same.

LEGEND

GARDEN HYDRANT	GH
BENCHES	BB
TREES	TT
SHRUBS	SS
GROUND COVER	GG
CREEPER	CC
BAMBOOS	BB
PALMS	PP

CLIENT: INSTITUTE OF TROPICAL METEOROLOGY, PUNE

DRAWING TITLE  
**PLANTING PLAN**

PROJECT:  
 LANDSCAPE DEVELOPMENT FOR IITM SHISHIR HOUSING PROJECT PHASE 1

SCALE	DATE	CHECKED
1:300	03/08/11	
JOB No.	DRAWING No.	REVISION
SHR148L	2	